

White Paper



Framework for Rapid Roll-out and Service Management of

White-labeled Wholesale Products

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We address key business areas in the context of faster service roll-out of wholesale products to retailers, white-labeling of wholesale products and efficient service management of these products:

- How can wholesalers launch their products faster in the retail market either as white-labeled products or through a retail front-end to realize revenues faster?
- How can a converged operations team manage both, wholesale and retail services through Intelligent Fallout Management?
- How can suppliers work together and rapidly co-create products/services for the industry in an agile manner?

Our white paper discusses solutions for white-labeling, potential business models and unified fallout management..

Convergence is transforming how Communication Service Providers (CSPs) operate like never before. The widespread application of software in telecommunications compels telecom operators to change their business models and identify new ways of generating revenues.

The communications and media industry is increasingly adopting white-labeling of products and services. A white-label product (or service) is a product (or service) produced by one company (the producer), and bought in bulk by other companies - the marketers - who rebrand and appropriate it.

Drivers for White-labelled Services

Service providers explore white-labeling to address challenges such as the lead time to build and sell end user products. When there are delays of up to six months, it leads to a delay in time-to-market and consequently in revenue realization. To reduce time-to-market and improve revenue realization, wholesale service providers can sell retail products/services in 'white-label' and 'private-label' versions. Infosys proposes 'white-labelled services' as a new revenue stream for wholesale communication service providers.

To pursue this business model, wholesale service providers must address challenges such as -

- Accelerating the launch of products in the retail market either as white-labeled products or through a retail front-end. The main challenge here is the flexibility of IT systems to operate in new business models.
- Management of order lifecycles for both wholesale and retail services, including intelligently managing order fallout, by a converged operations team. While developing new products/services, wholesale carriers must keep track of not only 'time-to-market' but also 'time-to-white-label' and the retailers' 'time-to-market' as their input is linked to these measures.
- Working with suppliers to rapidly co-create new products/services

A service provider (retail and wholesale) who wants to adopt new business models in the communications business and/or optimize the IT systems and operations may not have a standardized customer centric approach/solution. It causes inordinate delays, loss of revenue and impacts the customer experience while impacting IT costs.

Business Models

To sell and serve white-label products, the wholesale service provider must be responsive to the requests of the retailer's customers, from the sales order till fulfillment, including assurance.

1. Pure white-labeling (Managed services) – The retailer does not have any infrastructure and functions as a virtual operator
2. Partial white-labeling – The retailer has a capability such as order capture or billing but is dependent on the wholesaler
3. Services related to only Value Added Services (VAS) from the wholesale provider
4. Mobile provider venturing into triple play/quad play services without the infrastructure to provide wireline or cable services

Solution Approach for White-labeling

Enabling the white-labeling of products by the wholesale service provider using existing Business and Operations Support Systems (B/OSS) requires fulfillment and assurance in key areas.

Solution for Branding

Each Retail Service Provider (RSP) must brand the white-label product created so the product name appears different. In case of pure white-labeling, the RSP's customer must be able to view the white-labelled products being shown by the wholesale provider without any difference in the RSP's website. A practical approach is managed services i.e., the customer is directed to the wholesale provider's website that displays products of the RSP and maintained in its wholesale stack. Ordering products is done in the wholesale system side which is not known to the end customer.

The figure below illustrates the concept of branding and managed services.

Wholesale Service Provider

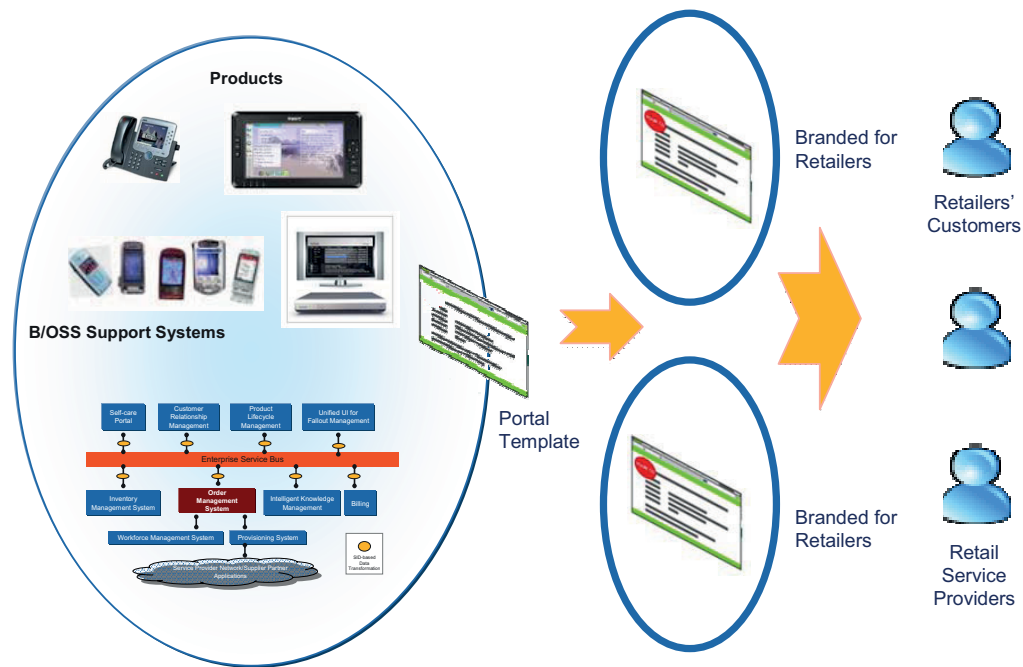


Figure 1: Rapid White-labeling/Retailing of Wholesale Services

It can be achieved through -

- *Single Sign On* for login credentials
- Web templates for branding of logos/images of the RSP
- Configuration approach to label products and show price differentiation depending on the RSP that the customer belongs to

Solution for Co-creation of Products

One of the areas to reduce time-to-market of white-label products is enhancing the flexibility of wholesale and retail IT systems. It can be achieved with product lifecycle management systems which can be used by the product management team to key in the required products and services. The product information can then be shared with the B/OSS applications of wholesale and retail systems. The process of sharing can be achieved promptly and efficiently by using the TM Forum's Information Framework (SID)-based transformations. The figure below illustrates the applications and flow of product information.

Product to Market

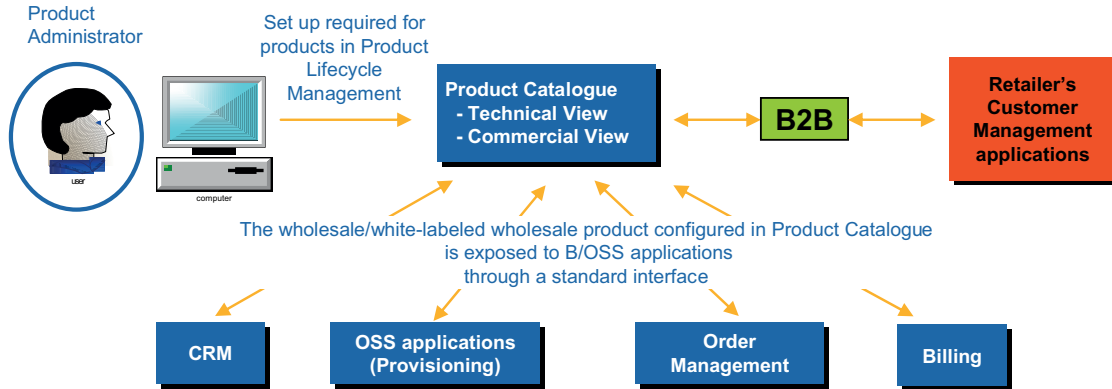


Figure 2: Back Office process for Product to Market

Solution Approach for Order Management, Bill Processing and Assurance

When white-labeled products are introduced into wholesale systems, changes need to be effected in key processes such as order management, invoice presentation and handling the customer/network related problems. The following table highlights the approach for each business model.

Process Area	Pure White-labeling Model	Partial White-labeling Model
Order Management	<ul style="list-style-type: none"> Order Capture: The customer is diverted into wholesale systems. Order Validation: The validation of orders is based on customer profile and products, and is done in the wholesale B/OSS system(s). Order Fulfillment: As the order is taken directly in the wholesale IT systems, the normal process of fulfillment is valid. The retailer's customer needs to be informed about the status of order until completion which introduces new interfaces and process changes. 	<ul style="list-style-type: none"> Order Capture: The customer's order is recorded in a retailer's customer management system. Order Validation: The validation of orders related to white-labeled products needs to be carried out from the wholesale and retailer's system side. Order Fulfillment: The order is divided and only the white-label products' fulfillment needs to be sent to wholesale systems.
Bill Processing	<ul style="list-style-type: none"> Rating and Bill Processing – The event records for the retailer's customer needs to be processed to generate a bill. Invoice generation – As it is pure white-labeling, the wholesale CSP needs to produce the invoice on behalf of the retailer's customer. 	<ul style="list-style-type: none"> Rating and Bill Processing – The event records for the retailer's customer needs to be identified and sent to the retailer for further bill processing. Retailer systems run the bill processing. Invoice generation – Invoice generation is done at the retailer's system.

Process Area	Pure White-labeling Model	Partial White-labeling Model
Assurance	<ul style="list-style-type: none"> • Recording the customer problem or network problem – When the customer reports a problem, it needs to be recorded and tracked in the wholesale IT system. In the event of any network problem, informing the impacted retailer's customer is going to be an added process in the wholesale side. • Resolution process and communication – The status of the resolution for the trouble ticket raised is shared with the retailer's customer. 	<ul style="list-style-type: none"> • Recording the customer problem or network problem – When the customer reports a problem, it needs to be recorded in the retailer's IT system and tracked. If the problem is related to the service of the white-labeled product, the retailer's systems need to coordinate with wholesales systems to send relevant information. It leads to a few process and technical changes over B2B. • Resolution process and communication – The resolution and status updates at the retailer's system has to be done by wholesale systems. They need to adhere with SLAs as per the agreement between them.

Solution for Intelligent Unified Fallout Management

As part of the order fulfillment process or customer problem (trouble ticket) resolution process, several activities need to be completed in a particular sequence. Under normal conditions, an activity needs to be completed successfully before the process transitions to the activity's successor(s). A fallout scenario involves a process, which may fail for some reason. Typically, a process malfunction is due to one of its activities failing.

The introduction of white-labeling products increases the number of activities and adds complexity to processes. Often, the business process requires a responsible individual to be notified for manual intervention or to automatically compensate for failure. The existing fallout-handling solutions lack consistent management and resolution of exceptions across BSS/OSS applications, supporting systems and work centers. They rely on costly manual resolution methods which make it difficult for the support groups to resolve leading to breakage of Service Level Agreements (SLAs).

The challenges faced by the CSPs include:

1. Modeling the rules and flow of control for exceptional situations.
2. Identifying the root cause of the activity that has failed and identifying the right support group.
3. When control reaches the activities, which are responsible for implementing corrective actions, offering the activity sufficient information to do its job.
4. Modeling the flow of control that must occur after any corrective action has been completed.

Infosys proposes a Unified Intelligent Fallout Management framework to address the challenges faced by CSPs. The framework consists of the following components:

- Utilization of the knowledge management system to model the rules and flow of control in the event of abnormal/erroneous/exceptional situations. The system guides the support groups towards faster resolution of the order, i.e., intelligent routing.
- Identification of the root cause of the problem in an activity/task can be achieved easily by using a unified single user interface approach. Utilization of COTS products such as Microsoft CCF to aggregate all BSS/OSS applications viz., CRM, Order Management, Workforce Management, Provisioning, ESB and Billing. It enables the support group to find the root cause of a problem and handle fallouts.

A support analyst who is resolving a fall out scenario needs to follow the steps and rules provided in the Knowledge Management tool to resolve abnormal/exception. This might result in checking through different BSS/OSS applications. The Unified Fallout Management tool divides the window of the application into three different panes, one pane showing the basic order/fault fall out information, another pane to guide the analyst with steps of knowledge Management, the other pane will have several tabs each representing the BSS/OSS applications to be traversed by the analyst while resolving the scenario. With this using one application window the analyst can quickly resolve the fall out scenario.

The figure below illustrates the framework for intelligent unified fallout management.

Sales Order/Customer Problem

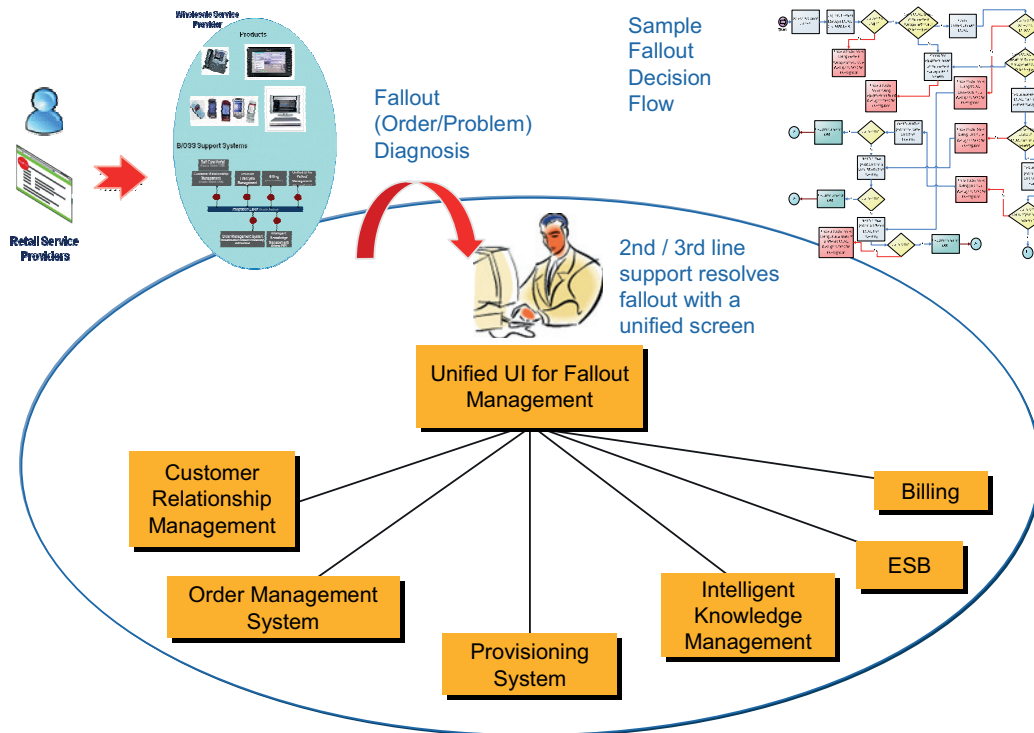


Figure 3: Intelligent Fallout Management Framework

End-to-end B/OSS Architecture

One of the best ways to implement the changes/enhancements while introducing white-label products in the wholesale set of BSS/OSS IT applications is to follow the 'end-to-end B/OSS Integration Framework' using the TM Forum's Information Framework called, 'Shared Information/Data (SID) Model'.

As per this framework, the integration among applications will be SOA-based. The services required for each process is published with SID-based data transformation. The integration (information exchange) between the applications of the wholesale and retail provider is robust and can be implemented promptly with this standardised approach of integration. A sample TM Forum framework-based IT systems landscape (of the wholesale provider) is illustrated in the figure below.

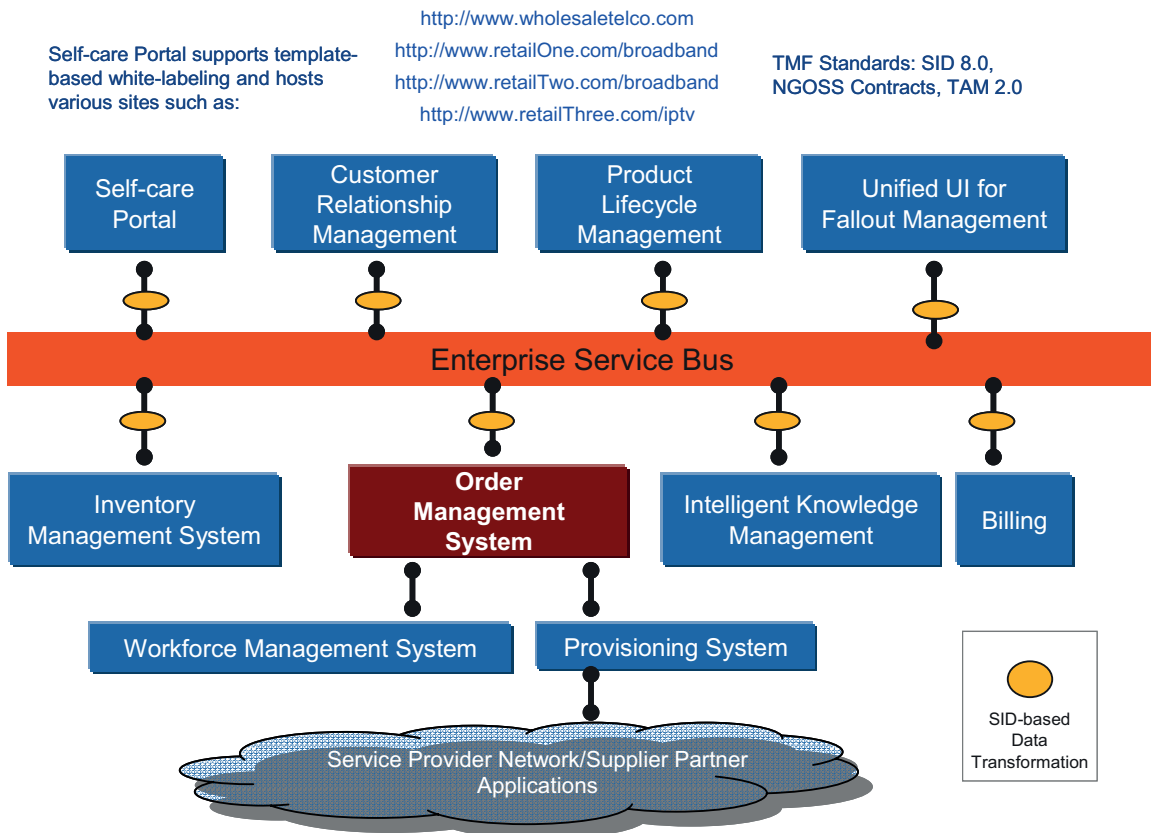


Figure 4: Wholesale B/OSS E2E Framework

Business Value

The above solution approach was implemented as a Proof of Concept for a major European telecom provider. The highlights of the solution included:

- The white-labeling concept offered an optimal solution for both - wholesalers having the infrastructure and retail service providers seeking to offer (quad play) bundled services without investing time, infrastructure and resources.
- Solution was extensible for multiple retailers with their specific branding on online services, products, etc.
- Integrated OSS and BSS and Intelligent Fallout Management reduced the time to launch, achieved faster revenue realization, reduced average handling time and improved productivity.
- For the mass market services in the Proof of Concept, there was a reduction in the time to launch by 41%. Revenue of US\$ 18 million was realized 5 months in advance. Moreover, the average handling time of fallouts reduced by 21% and productivity increased by 29%.

Conclusion

White-labeling is gaining popularity due to changing business models and the drive by service providers to achieve lean operations. Some of the challenges of lean operations can be addressed by CSPs with a template-based approach to enable white-label services. A detailed level tracking and quick resolution can be achieved with the unified intelligent fallout management solution.

These challenges can be addressed by using an Integrated E2E B/OSS Framework, a template-based branding approach and the use of an intelligent unified fallout management solution.

About the Authors

Gnanapriya C is a Principal Architect, heading the Architecture Group of the Communications, Media and Entertainment Business Unit at Infosys Limited. She has more than 15 years of software and telecom experience. Gnanapriya has been involved in the Wireless and B/OSS related projects/programs implemented for various OEMs and service providers. She consults for transformation programs, architecture, reviews, end-to-end Business/Operations Support Systems solution. Her areas of interest include Wireless Network and Applications, IP Networks, Location-based Services, BLOSS and Social Networking with multi channel delivery. She has worked on multiple software technologies and platforms. Her current focus is on architecting E2E OSS/BSS transformation and green field solutions using COTS packages.

Gnanapriya holds an Electronics and Communications Engineering Degree from the Thiagarajar College of Engineering, Madurai Kamaraj University; a Master's Degree in Communication Engineering from PSG College of Technology, Bharathiar University and an MBA from the Madurai Kamaraj University.

Gnanapriya has published papers, presented at international conferences and co-authored a book on 'Digital Signal Processing' published by Tata McGraw Hill, available in International edition and Mandarin. She has been invited as an author for the 'Billing Dictionary' published by Althos Publications. She had been the lead for two catalyst programs at TMF Conferences in Dallas 2007 and Nice 2008 on E2E B/OSS solutions. She has been in the review panel for the IEEE IMSAA 2007 technical committee.

Raja Sekhar Ravi is a senior consultant in the Telecom Business Support Systems (BSS) with more than 10 years of global experience across business strategy, architecting, solution design, development and delivery in Telecom BSS (CRM and Billing). He has consulted for more than eight global communication service providers with various COTS packages of CRM, Billing, apart from legacy systems.

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Raja is a TOGAF certified enterprise architect and a certified Project Management Professional (PMP). He holds a Master's Degree in Technology from the Indian Institute of Technology (IIT), Kharagpur and a Bachelor's Degree in Mechanical Engineering from the College of Engineering, Andhra University, India.

Robin George is a Senior Consultant with 11 years of experience in Telecom. He has rich strategy execution experience in the business process areas of Concept to Market, Lead to Cash and Trouble to Resolve.

Robin has a unique understanding of how IT can be used to achieve business objectives. He has played a lead role in building business solutions for Communication Service Providers in the BSS and OSS domain. He is currently leading a Wholesale Service design team of more than 100 consultants for a leading European Telco. This Next Generation Converged Core Platform will deliver both traditional Voice services as well as Broadband and IP/Ethernet services.

Robin has a Master's Degree in Telecommunication from the University College London, U.K. and a Bachelor's Degree in Engineering from the University of Mumbai, India.



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